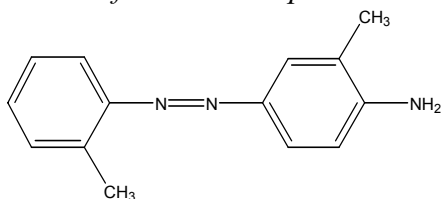


***o*-AMINOAZOTOLUENE**

CAS No. 97-56-3

First Listed in the *Fifth Annual Report on Carcinogens*



CARCINOGENICITY

o-Aminoazotoluene is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC V.8, 1975). When administered in the diet, the compound induced hepatomas and lung tumors and lung hemangioendotheliomas in mice and liver adenomas, hepatocellular and other liver carcinomas, and cholangiomas in male rats. When administered in the diet, the compound induced hepatocellular carcinomas in male hamsters and hepatomas and urinary bladder papillomas and urinary bladder papillary and transitional cell carcinomas in hamsters of both sexes. Also, one carcinoma and one papilloma of the gallbladder were observed in two female hamsters and three females had mammary adenocarcinomas believed to be related to the treatment. Of four dogs that survived feeding with *o*-aminoazotoluene, two developed carcinomas of the urinary bladder, one an adenocarcinoma of the liver and gallbladder, and one an adenocarcinoma of the gallbladder with a cholangioma and a hepatoma in the liver. Repeated dermal application of the compound induced liver tumors in mice. When administered by subcutaneous injection, *o*-aminoazotoluene induced lung tumors in mice of both sexes, local fibrosarcomas in female mice, and hepatomas in female mice and rats. A single subcutaneous injection increased the incidence of hepatomas and lung adenomas in newborn mice of both sexes. When administered by intraperitoneal injection, *o*-aminoazotoluene increased the incidence of hepatomas in mice of both sexes. There is some evidence that it produces papillomas of the urinary bladder in rabbits after direct instillation in the urinary bladder and in mice after bladder implantation.

There are no adequate data to evaluate the carcinogenicity of *o*-aminoazotoluene in humans (IARC V.8, 1975; IARC S.4, 1982).

PROPERTIES

o-Aminoazotoluene occurs as golden crystals that melt at 101°C and are practically insoluble in water but soluble in ethanol, ether, chloroform, acetone, cellosolve, and toluene, as well as in oils and fats. *o*-Aminoazotoluene emits toxic nitrogen oxides (NO_x) when heated to decomposition.

USE

o-Aminoazotoluene is used in the manufacture of pigments and for coloring oils, fats, and waxes, such as shoe and other wax polishes (Colour Index, 1971). It is also used as a chemical intermediate for the production of the dyes Solvent Red 24 and Acid Red 115. *o*-Aminoazotoluene is not used in foods, drugs, or cosmetics (IARC V.8, 1975).

PRODUCTION

The USITC reported that one manufacturer produced an undisclosed amount of *o*-aminoazotoluene from 1980 to 1994 (USITC, 1981-1991, 1993-1995). There are five producers of the compound in the United States (HSDB, 1997). In 1977, there were seven domestic manufacturers and two importers of *o*-aminoazotoluene reported in the 1979 TSCA Inventory. Three manufacturers produced an estimated total of 30,000 to 300,000 lb; the remaining four manufacturers reported no production volume for *o*-aminoazotoluene in 1977 (TSCA, 1979). No import or export figures for 1977 were available. U.S. production of *o*-aminoazotoluene was estimated to be > 1,000 lb in 1975 and 395,000 lb by two manufacturers in 1972 (SRI, 1982). Large-scale production of *o*-aminoazotoluene in the United States began in 1914 (IARC V.8, 1975).

EXPOSURE

The primary routes of potential human exposure to *o*-aminoazotoluene are dermal contact and inhalation. It is not approved for use in foods, drugs, or cosmetics, which could possibly reduce potential widespread exposure (IARC V.8, 1975). Occupational exposure may occur by inhalation of dust or by contact during its production, formulation, or use (HSDB, 1997). The National Occupational Exposure Survey (NOES) (1981-1983) indicated that 737 workers potentially were exposed to *o*-aminoazotoluene in the workplace (NIOSH, 1984). The NOES estimate was based only on observations of the actual use of the compound. The National Occupational Hazard Survey, conducted by NIOSH from 1972 to 1974, estimated that 3,811 workers were potentially exposed to *o*-aminoazotoluene in the workplace (NIOSH, 1976). This estimate was derived only from observations of the use of tradename products known to contain the compound. The Toxic Chemical Release Inventory (EPA) listed one industrial facility that produced, processed, or otherwise used aminoazotoluene in 1988 (TRI, 1990). In compliance with the Community Right-to-Know Program, the facilities reported releases of aminoazotoluene to the environment which were estimated to total 250 lb.

REGULATIONS

EPA subjects *o*-aminoazotoluene to reporting requirements and establishes threshold amounts for the compound under the Superfund Amendments and Reauthorization Act (SARA). EPA proposed regulating *o*-aminoazotoluene under the Resource Conservation and Recovery Act (RCRA). OSHA regulates *o*-aminoazotoluene under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table B-7.